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SUBJECT: CHILE ENERGY PROFILE AND POTENTIAL FOR BIOFUELS

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¶1. (U) Summary. Energy security is a top priority for Chile. It has limited domestic energy resources and depends on imports. Argentina's own gas crisis forced Chile to encourage new investment in energy generation, from both conventional and non-conventional sources. The GOC has implemented an Energy Security Action Plan, comprising short and medium-term measures to diversify Chile's energy matrix, achieve greater energy independence and encourage the efficient use of energy. End summary.

Energy Matrix Dependent on Fuel Imports

¶2. (U) Chile currently imports almost two-thirds (72 percent) of its primary energy consumption, according to the Ministry of Mining and Energy. In 2005, 98 percent of oil used was imported, 75 percent of natural gas, and 96 percent of coal. Chile is keenly aware of its vulnerability to the volatility of international prices and/or supply interruptions. In 2006, construction began of a liquid natural gas import terminal in central Chile, which will start receiving imports in 2008. A second LNG terminal in the north is also under consideration. Long-term plans to import LNG are Chile's response to irregularities in the supply and cost of Argentinean gas.

¶3. (U) Over the last few decades, hydropower has been Chile's main source of electricity, with oil used to supply industrial and residential consumption. In the mid-1980s, Chile started to diversify its energy matrix by importing natural gas from Argentina for use in electricity generation and by industries and households. Seven pipelines, representing an investment of USD 1.6 billion connect Chile to different gas basins in Argentina. Gas-fired plants, with a total capacity of 3,400 MW, were also built at a cost of USD 2 billion. In 2005, the primary electric energy matrix was 329,283 teracalories, from crude oil (33.5 percent), natural gas (23.8 percent), hydroelectricity (20.0 percent), wood and others (14 percent), and coal (8.7 percent).

Industry Dominates Fuel Consumption

¶4. (U) The heart of Chile's economy - manufacturing - is dependent upon imported energy. Of the gas Chile imports from Argentina, only eight percent is used in Chilean households. Thus, the unilateral Argentinean cutoffs and price fluctuations have had their largest impact on industrial production. Industry responds with diesel and coal use, but costs are higher and the environmental impact much greater. In the transportation sector, there was been a 25 percent increase in the consumption of gas and diesel between 1995-2004, with diesel consumption increasing by 49 percent (2.062 mil m3 to

3.072 mil m3) and gasoline use increasing by 7 percent (2.752 mil m3 in 1995 to 2.938 mil m3 in 2004).

Alternative Energy

¶5. (U) President Michelle Bachelet has taken measures to ensure that 15 percent of the new generating capacity installed during her government uses alternative energy sources such as mini-hydro, biomass, geothermal power, and eolic energy. At present, only 285.7 MW (2.4 percent of total installed capacity) is generated using these sources - biomass generating 170 MW, (most from cellulose), small hydroelectric plants generating 112 MW, and 2 MW from one wind farm.

Private Sector System

¶6. (U) All electricity generation, transmission and distribution are in private hands. A total of 70 electricity companies operate in Chile: 37 distributors, 28 generators, and 5 transmission companies. In 2005, installed generating capacity reached 11,982 MW (up from 5,635 MW in 1995 and only 3,324 MW in 1985). The National Energy Commission (CNE) estimates that Chile will need to double its present capacity by 2020.

Renewable Energy Projects

¶7. (U) In 2005, Chile launched and funded a number of projects in renewable energy -- 22 hydro, 12 wind, 11 biomass, and one geothermal. In 2006, a further 19 hydro, 28 wind, 8 biomass will be launched with additional with the aim of all the listed projects being fully operational by 2010. Additionally, GOC is not ignoring energy generation by renewable sources in the intervening period 2007-2010. In September, the GOC held its "1st International Investment Meeting on Renewables," which included 80 foreign investors from 15 different countries, including a U.S. DOE representative, targeting 40 projects. This meeting was the clearest signal yet that the GOC recognized that joint public-private efforts are needed to address challenges and opportunities in Chile's energy sector.

Investment Incentives/Environmental Standards

¶8. (U) The GOC wants new investment in energy but without compromising its environmental standards. In May 2006, Chile's environmental agency (CONAMA) agreed to draft new emissions standards, expected by the end of 2006. New investment in Chile's electricity sector has been held back by regulator uncertainly over environmental standards, continued fluctuations in the gas supply from Argentina, and the risk of tariff reductions due to technological developments.

¶9. (U) In 2005, Chile introduced the so-called "Short Law II" to provide incentives for private investment in power generation. Long-term contracts between generators and distributors at known prices (indexed to fuels costs) are meant to create higher revenue certainty for generators and increased security supply for distributors. As of August 2006, the National Energy Commission (CNE) had received interest in 62 new investment projects in the generating sector (most are hydro), representing a potential total increase in capacity to 12,458 MW by 2020. The GOC's Energy Security Plan aims to encourage new investment in generation, using both conventional and non-conventional energy sources.

Transportation Infrastructure

¶10. (U) Chile has a modern port and road infrastructure system covering most of the major cities in the entire country. There are no flex-fuel vehicles. Import duties are extremely low in general at around six percent. Additionally, Chile has an extensive network of trade agreements further reducing tariffs.

Sugar Industry and Biofuels

¶11. (U) The sugar industry in Chile is a monopoly, which is privately owned by a Spain-based company. Chile is a net importer of sugar, and beets are its primary domestic source for sugar. The use of sugar beets as an alternative source of energy is cost prohibitive and ineffective, as Chile does not produce enough beets to meet current demand.

¶12. (SBU) At present, Chile does not have a framework to start producing biofuels at a commercial level or to invest in this type of industry. At a minimum, before launching an effort to produce biofuel commercially, more studies need to be completed, which could take years. Chile's base of corn and sugar beet production currently come nowhere close to the potential input demands to produce biofuel. Just as an example, to replace 5 percent of Chile annual gasoline use, Chile would need 300,000 hectares of raps, or twenty times of the 15,000 hectares grown in the country.

¶13. (SBU) Comment. Chile's renewable energy projects have the potential to see the light of day eventually, given enough sustained funding and political interest. Of the projects proposed, those based upon hydroelectricity seem to be the most feasible. Geothermal energy has the potential to be a viable energy source for Chile, although given current technology the geothermal sources are too far away from major urban areas to be of much use. For the foreseeable future, biofuel and energy from biomass will not be significant sources of energy for Chile. The discovery of methane hydrates along Chile's continental shelf provides another potential source of energy should the technology to exploit this resource become available without creating major environmental damage. The near-term increase in Chile's energy capacity, and diminished reliance on Argentina as a supplier, will come from the LNG facility to open in 2008 and investor interest from recent tenders offered to overseas investors.

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